Palomar Energy Project

Preliminary Draft
Waste Management Plan

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CONTENTS

LIST OF TABLES

1.0 INTRODUCTION

Hazardous and non-hazardous wastes will be generated during the construction and operation of the Palomar facility. This preliminary draft Waste Management Plan (Plan) is based on current expectations of the operating conditions at the facility. As needed, the Plan will be revised to address actual operating conditions, because actual conditions may vary somewhat from expectations.

There are a variety of requirements for storage, management, packaging, and labeling for hazardous waste, and training requirements for those employees involved in hazardous waste operations. The Plan is not intended to be a comprehensive listing of all of the requirements applicable to the management of waste at the Palomar site.

The Plan addresses the waste management method selected for each waste stream. For those waste streams that can be economically recycled, the Palomar project intends to recycle the waste. For those waste streams for which no economically viable markets are available, Palomar Energy plans to manage the waste in the most environmentally sound manner available.

Markets are readily available for most metals, glass, and paper, and the estimated quantity diverted from landfill to a recycling program for each of these waste streams approaches 100%. Markets are also readily available for batteries, fluorescent light bulbs and used oil; the estimated quantity diverted from landfill to a recycling program for each of these waste streams approaches 100%. The catalysts used for air pollution control either contain vanadium (the NOx catalyst) or precious metals (the CO catalyst). These metals have a significant value and the catalysts will be recycled to recover the metals present. 55-gallon drums will be returned to the supplier when empty.

Waste consisting of untreated wood can be diverted from landfill to a composting facility. Treated wood cannot be composted, and will be disposed to landfill. An estimated 80% of the wood waste can be diverted to a composting facility. Concrete may be crushed and used for aggregate. Up to 50% of the concrete waste generated may be diverted from landfill to a recycling program.

The waste management method planned for each anticipated waste stream is discussed in Section 2.0 for construction wastes and Section 3.0 for wastes generated during operations.

Training requirements for employees involved in hazardous waste operations are briefly summarized in Section 4.0.

2.0 HAZARDOUS AND NON-HAZARDOUS WASTE GENERATED DURING CONSTRUCTION

2.1 Hazardous Materials Used During Construction

Hazardous materials used during construction of the project site and supporting facilities will be limited to gasoline, diesel fuel, motor oil, hydraulic fluid, solvents, cleaners, sealants, welding flux, various lubricants, and paint. At the end of the construction period and just prior to startup, the hazardous materials required for normal operation will be shipped to the site. A spill or release of any of these materials may result in the generation of a hazardous or non-hazardous waste.

Small quantities of fuel, oil, and grease drippings from construction equipment, which have low relative toxicity, are expected to biodegrade naturally. If there is a large spill from a service or refueling truck, contaminated soil will be excavated and placed into barrels or other approved containers by service personnel for off-site disposal as a hazardous waste at a permitted hazardous waste disposal facility. If a spill involves hazardous materials equal to or greater than the specific reportable quantity (25 gallons for petroleum products), Palomar Energy Project, or the construction contractor, as appropriate, will adhere to all federal, state, and local reporting requirements.

2.2 Hazardous Waste Generator During Construction

The construction contractor will be considered the generator of used oil and other miscellaneous hazardous and non-hazardous waste produced during facility construction and will be responsible for compliance with applicable federal, state, and local regulations, including licensing, personnel training, accumulation limits, reporting requirements, and record keeping.

2.3 Contaminated Soil

It is unlikely that contaminated soil will be encountered during Palomar construction activities. However, if contaminated soil is encountered during power plant construction, the soil will be segregated, sampled, and tested in order to determine appropriate disposal/treatment options. If the soil is classified as hazardous (according to 40 CFR 261 and CCR Title 22), the San Diego County Environmental Health Services Department will be notified immediately and the soil will be hauled to a Class I hazardous waste landfill or other appropriate soil treatment or recycling facility. If petroleum hydrocarbon impacted soil is encountered, but can be classified as non-hazardous (as defined by 40 CFR 261 and CCR Title 22), it may remain onsite or be disposed/recycled as non-hazardous waste.

2.4 Summary of Wastes Generated During Construction

A summary of the waste streams, both hazardous and non-hazardous, anticipated during the construction of the project are presented along with the proposed management method in Table 2-1. An estimate of the percentage of waste materials that will be recycled is also presented in the table.

Table 2-1
Construction Waste Streams and Management Methods

Waste Stream and Classification	Origin	Estimated Quantity and Frequency of Generation	Waste Management Method		Estimated Percentage of Waste Recycled
			On-site	Off-site	
Construction waste Non-hazardous	Scrap wood	20 cu yd/wk, intermittent	20 yd. Dumpster	Dispose to composting facility, if available, or landfill	80%
Construction waste Non-hazardous	Steel, aluminum, glass, paper	40 cu yd/wk, intermittent	Segregate into dedicated waste containers	Recycle at approved recycling facility	100%
Construction waste Non-hazardous	Concrete	10 cu yd/wk, intermittent	20 yd. Dumpster	Recycle as aggregate, if available, or landfill	50%
Construction waste Non-hazardous	Plastic, insulation	10 cu yd/wk, intermittent	None	Dispose to land fill	0%
Empty hazardous material containers Hazardous	Material delivery	Two 55-gallon drums per month and 1 cu yd/wk of other containers, intermittent	Storage for <90 days	55-gallon drums will be returned to supplier; smaller containers will be disposed to permitted hazardous waste disposal facility	50%

Table 2-1
Construction Waste Streams and Management Methods

Waste Stream and Classification	Origin	Estimated Quantity and Frequency of Generation	Waste Management Method		Estimated Percentage of Waste Recycled
			On-site	Off-site	
Construction waste Hazardous	Solvents, used oils, paint	110 gallons, intermittent	Storage for <90 days	Recycle at permitted recycling facility	100%
Construction waste Hazardous	Adhesives, oily rags	55 gallons, quarterly	Storage for <90 days	Dispose to permitted hazardous waste disposal facility	0%
HRSG cleaning waste Hazardous	Chelant type solution	60,000 gallons, one time event (prior to start-up)	Baker Tank(s)	Dispose to permitted hazardous waste disposal facility	0%
Spent batteries Hazardous	Lead acid type	20 per year, intermittent	Store for <90 days	Recycle at permitted recycling facility	100%
Sanitary waste Non-hazardous	Portable Chemical Toilets	200 gallons/day, periodically pumped to tanker truck by licensed contractor	None	Ship to sanitary water treatment plant	0%

3.0 HAZARDOUS AND NON-HAZARDOUS WASTES GENERATED DURING OPERATIONS

3.1 Hazardous Materials Used During Operations

There are several processes required for operation of the proposed power generating facility that involve the use hazardous materials. These processes include: 1) consumption of fuel; 2) control of emissions; 3) water treatment; and 4) maintenance activities. These operations could result in the generation of either hazardous or non-hazardous waste during normal operation. The hazardous and non-hazardous wastes anticipated to be generated, along with the proposed management methods are described below.

3.2 On-Site Waste Management

3.2.1 Storage

Waste will be stored in 55-gallon drums or other containers, as appropriate. The containers will be stored in a designated hazardous waste storage area in compliance with the design standards specified in 40 CFR Part 264.

Some types of waste may be accumulated in satellite accumulation areas, as required for operations. The quantity of material in each satellite accumulation area will be limited to 55 gallons. Drums will be labeled and the lid or bung caps secured except when waste is being added to the container.

The containers will comply with the packaging requirements of 49 CFR Parts 173 and 178.

3.2.2 Labeling

All hazardous waste containers will be labeled in accordance with the labeling requirements of 40 CFR 262.32 and 49 CFR Part 172.

3.2.3 Inspections

The hazardous waste storage area will be inspected weekly in accordance with the requirements of 40 CFR 264. A log of inspections will be maintained on-site by Palomar personnel with responsibility for environmental compliance.

3.2.4 Manifests

A Uniform Hazardous Waste Manifest will be used as the shipping paper for shipments of hazardous wastes in accordance with the requirements of 40 CFR 262.20, *et seq*.

3.2.5 Shipments

Hazardous waste will be shipped by licensed transporters. Palomar will obtain a copy of the transporter's certification prior to shipment.

The transporter will placard the vehicle in accordance with the requirements of 40 CFR 262.33 and 49 CFR Part 172, Subpart F. It is Palomar's responsibility to ensure that the placarding is complete prior to the transport vehicle leaving the Palomar Energy Project site.

3.3 Summary of Waste Generated During Operations

A variety of hazardous and non-hazardous wastes will be generated as a result of the power plant operations. An overview of the primary waste streams anticipated to be generated during facility operations, the classification of the waste and the proposed disposition is presented in Table 3-1.

Table 3-1
Operational Waste Streams and Management Methods

Waste Stream and Classification	Origin	Estimated Quantity and Frequency of Generation	Waste Management Method		Estimated Percentage of Waste Recycled
			On-Site	Off-Site	
Used hydraulic fluid, lubricating oils Hazardous	All equipment	1,300 gallons per year, intermittent	Accumulate for <90 days	Recycle by qualified vendor	100%
Used oil filters Hazardous	All equipment	<55 gallons per month, intermittent	Drain of free oil; accumulate for <90 days	Recycle by qualified vendor	100%
Spent batteries - lead/acid Hazardous	Uninteruptable power supply (UPS)	500 pounds, intermittent, estimated to be once every 3 years	Accumulate for <90 days	Recycle by qualified vendor	100%

Table 3-1
Operational Waste Streams and Management Methods

Waste Stream and Classification	Origin	Estimated Quantity and Frequency of Generation	Waste Management Method		Estimated Percentage of Waste Recycled
			On-Site	Off-Site	
Spent SCR catalyst containing vanadium Hazardous	HRSG for NO_x reduction	70,000 pounds intermittent, estimated to be once every 3 to 5 years	None	Recycle by qualified vendor	100%
Spent CO catalyst containing precious metals Non-hazardous	HRSG for CO and VOC oxidation	70,000 pounds, intermittent; estimated to be once every 3 to 5 years	None	Recycle for precious metal recovery by qualified vendor	100%
Used Air Filters Non-hazardous	CTG	2000 pounds, quarterly	None	Dispose to permitted municipal landfill	0%
Turbine wash water, Non-hazardous	Turbine cleaning with detergent	<1000 gallons/month	Baker Tank(s)	Dispose to permitted industrial wastewater treatment plant	0%
Cooling Tower Basin Sludge Non-hazardous	Cooling tower	4000 pounds, annually	None	Dispose to permitted landfill	0%

Table 3-1
Operational Waste Streams and Management Methods

Waste Stream and Classification	Origin	Estimated Quantity and Frequency of Generation	Waste Management Method		Estimated Percentage of Waste Recycled
			On-Site	Off-Site	
Empty hazardous material containers Hazardous	Material delivery	Two 55-gallon drums per month and 1 cu yd/month of other containers, intermittent	Storage for <90 days	55-gallon drums will be returned to supplier; smaller containers will be disposed to permitted hazardous waste disposal facility	50%
Oily rags, oil absorbent Hazardous	Maintenance operations	55 gallons per month, intermittent	Accumulate for <90 days	Dispose to permitted hazardous waste disposal facility	0%
Fluorescent lamps Non-hazardous	Maintenance operations	1000 lbs, once every 5 years	Accumulate for <90 days	Recycle by qualified vendor	100%
Paper, packaging Non-hazardous	Office waste	500 pounds/week, continuous	Dumpster	Recycle by qualified vendor	100%

4.0 TRAINING

Training is required for Palomar personnel involved with hazardous waste operations.

4.1 Construction

4.1.1 Training

Palomar project construction workers will handle a variety of commercially available chemicals. Workers will be instructed during "tail-gate" safety meetings on the proper handling and disposal of these hazardous materials in order to protect their own personal safety as well as to protect public health and the environment. Normal precautions will be exercised by the construction contractor to protect workers, as required by Cal-OSHA. Such precautions include, but are not limited to,

- Proper labeling of hazardous materials,
- Safe storage of flammable materials away from potential ignition sources,
- Location of eye wash stations and safety showers,
- Selection and use of personal protective equipment,
- Notification requirements in the event of a hazardous material spill or other emergency,
- Emergency contact information, and
- Location of, and route to, the nearest hospital in the event of an injury.

It is the responsibility of project construction contractor(s) to provide the necessary safety training to contractor employees brought onto the jobsite.

4.1.2 Supervision

As part of the selection criteria for contractors that work at the facility, Palomar Energy will obtain and evaluate information regarding the contractor's safety performance and programs, including:

- MSDS for all materials brought on-site,
- Certifications, as necessary for the required work, and
- Training records demonstrating competence in the required tasks.

Palomar will complete routine inspections of the contractor activities during work on or around the construction site. Palomar will document observed safety and waste management issues and report them to the contractor' on-site supervisor for immediate correction.

4.2 Training Program for Operations

Training for Palomar personnel relevant to the handling or management of hazardous and non-hazardous wastes is summarized in Table 4-1. Employee training records are maintained on-site.

Emergency Response Plan drills will be performed annually for all onsite employees. The drill will performed using all procedures described in the plan, beginning with the detection of an uncontrolled release of hazardous material or hazardous waste through the evacuation of employees to an offsite location. For a drill, some operators would likely remain in the plant to operate and monitor critical processes rather than shut down some equipment. It is expected that emergency response drills will be coordinated with emergency response agencies, such as the City of Escondido Fire Department.

Table 4-1
Palomar Energy Project Hazardous Waste Training Program

Training Subject	Frequency
Safety Programs	
Emergency Response Plan	At initial assignment, and annually thereafter
Hazard Communication	At initial assignment, and annually thereafter
Respiratory Protection	At initial assignment, and annually thereafter
Personal Protective Equipment	At initial assignment, and annually thereafter
Waste Management Procedures	
Packaging and Labeling Requirements	Annually
Hazardous Waste Management Requirements	At initial assignment, and annually thereafter
OSHA 40-hour Emergency Response Training (Emergency Response Team Only)	At initial assignment to the Emergency Response Team, and annually thereafter